

CLAIMS

What is claimed is:

- 5 1. A preconditioned air connector, comprising:
 a body having an integrated bearing structure;
 a first member pivotably coupled to the body, the first member being at least partially
supported by the integrated bearing structure; and
 a second member coupled to the first member, wherein pivotal actuation of the first
10 member in a direction generally tangential to the body directs axial translation of the second
member from a first position to a second position.
2. The connector as recited in claim 1, wherein the body comprises an injection
molded plastic.
- 15 3. The connector as recited in claim 1, wherein the first member comprises a
camming surface.
4. The connector as recited in claim 3, wherein the camming surface comprises an
arcuate surface, and wherein the camming surface is disposed within a slot.
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5. The connector as recited in claim 3, wherein the camming surface defines the
first and second positions.
6. The connector as recited in claim 1, wherein the second member comprises a
25 clamping portion.
7. The connector as recited in claim 6, wherein the clamping portion is adapted to
releasably secure the connector to an aircraft.

8. A preconditioned air connector, comprising:
a body; and
a connection assembly comprising:

5 a first member having a camming surface disposed within a slot, the first member being pivotably coupled to the body such that the first member actuates in a direction generally tangential to the body; and

a second member coupled to the first member via an engagement member, wherein interaction between the engagement member and the camming surface biases the second member from a first position to a second position.

10 9. The connector as recited in claim 8, wherein the camming surface is arcuate.

10. The connector as recited in claim 8, wherein the connection assembly further comprises a cover securable to the body, wherein the cover comprises a guide portion adapted to guide movement of the second member.

11. The connector as recited in claim 8, wherein the body comprises an integrated bearing structure, the bearing structure configured to at least partially support the first member.

20 12. The connector as recited in claim 8, wherein the body comprises an injection molded plastic.

13. The connector as recited in claim 8, wherein the connector comprises a plurality of connection assemblies.

25 14. The connector as recited in claim 13, wherein a first connection assembly is disposed at a first location on the body and a second connection assembly is disposed at a second location on the body opposite the first location.

15. The connector as recited in claim 8, wherein the connector is couplable to an aircraft.

16. The connector as recited in claim 8, wherein the slot comprises a locking portion adapted to releasably secure the engagement member with respect to the slot.

17. A preconditioned air connector, comprising:
a body;
a first member rotatably coupled to the body, the first member comprising an arcuate camming surface; and
a second member coupled to the first member, wherein rotational actuation of the first member in a direction generally tangential to the body actuates the second member from a first axial position with respect to the body to a second axial position with respect to the body.

18. The connector as recited in claim 17, wherein the body comprises an integrated guide portion, the guide portion being adapted to prevent rotational and radial movement of the second member with respect to the body.

19. The connector as recited in claim 17, wherein the body comprises an integrated bearing structure, the bearing structure configured to at least partially support the first member.

20. A system for routing preconditioned air into an aircraft, comprising:
a conduit adapted to route preconditioned air from a source to the aircraft; and
a connector adapted to couple the conduit to the aircraft, the connector comprising:
a body;
a first member rotatably coupled to the body; and
a second member coupled to the first member, wherein rotational actuation of the first member in a direction generally tangential to the body actuates the second member in an axial direction with respect to the body.

21 The system as recited in claim 20, wherein the first member includes a slot having a camming surface.

22. The system as recited in claim 21, the camming surface being arcuate.

23. The system as recited in claim 20, wherein the body comprises an integrated bearing structure adapted to at least partially support the first member.

24. The system as recited in claim 20, further comprising a flexible seal disposed between the body and the aircraft.

25. The system as recited in claim 20, wherein the body comprises an injection molded plastic nylon.

26. A system for routing preconditioned air into an aircraft, comprising:
a flexible conduit for directing the preconditioned air from a source to the aircraft; and
a connector configured to couple the conduit to the aircraft, the connector comprising:
a body having an integrated bearing structure;
a first member rotatably coupled to the body and having a slot disposed therein,
the slot comprising an arcuate camming surface; and
a second member coupled to the first member, the second member having an engagement member coupled thereto;
wherein rotational actuation of the first member engages the engagement member with the camming surface thereby actuating the second member from a first axial position with respect to the body to a second axial position with respect to the body.

27. The system as recited in claim 26, wherein the body comprises an injection molded plastic.

28. The system as recited in claim 26, wherein the first member is configured to rotate in a direction generally tangential to the body.

29. The system as recited in claim 26, wherein the body comprises an integrated guide portion, wherein the guide portion restricts rotational and radial movement of the second member with respect to the body.

30. The system as recited in claim 26, wherein the slot comprises a locking portion adapted to releasably secure the second member at a desired axial position.

31. A method for securing a preconditioned air connector, the method comprising:
coupling a first member to a second member;
pivoting the first member having an arcuate camming surface in a direction generally tangential to a body, the first member being pivotably coupled to the body; and
driving the second member in an axial direction with respect to the body via the pivoting of the first member.

32. The method as recited in claim 31, further comprising coupling the connector to a preconditioned air source.

33. The method as recited in claim 31, further comprising routing the preconditioned air via a conduit.

34. The method as recited in claim 32, further comprising coupling the connector to an aircraft.

35. The method as recited in claim 31, further comprising supporting the first member via an integrated bearing structure of the body.